

Feasibility of Pre-Accession Physical Fitness Screening

Presentation to Accessions Research Consortium
28 January 2004

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Objective

Determine feasibility of a pre-accession physical fitness screening procedure

- Possible screening tests**
- Difficulties with test**
- Number of applicants screened out**
- Effects on BCT attrition**

Steps in the Process

- **Literature reviews**
 - **Attrition for the military services**
 - **Current and projected youth fitness/ improvements in fitness in BCT**
- **What is the AIT fate (attrition and fitness) of low fit in BCT (150-160 APFT points)?**
- **Determine 3 COAs for pre-accession screening**
- **Effects on attrition of using pre-accession screening**

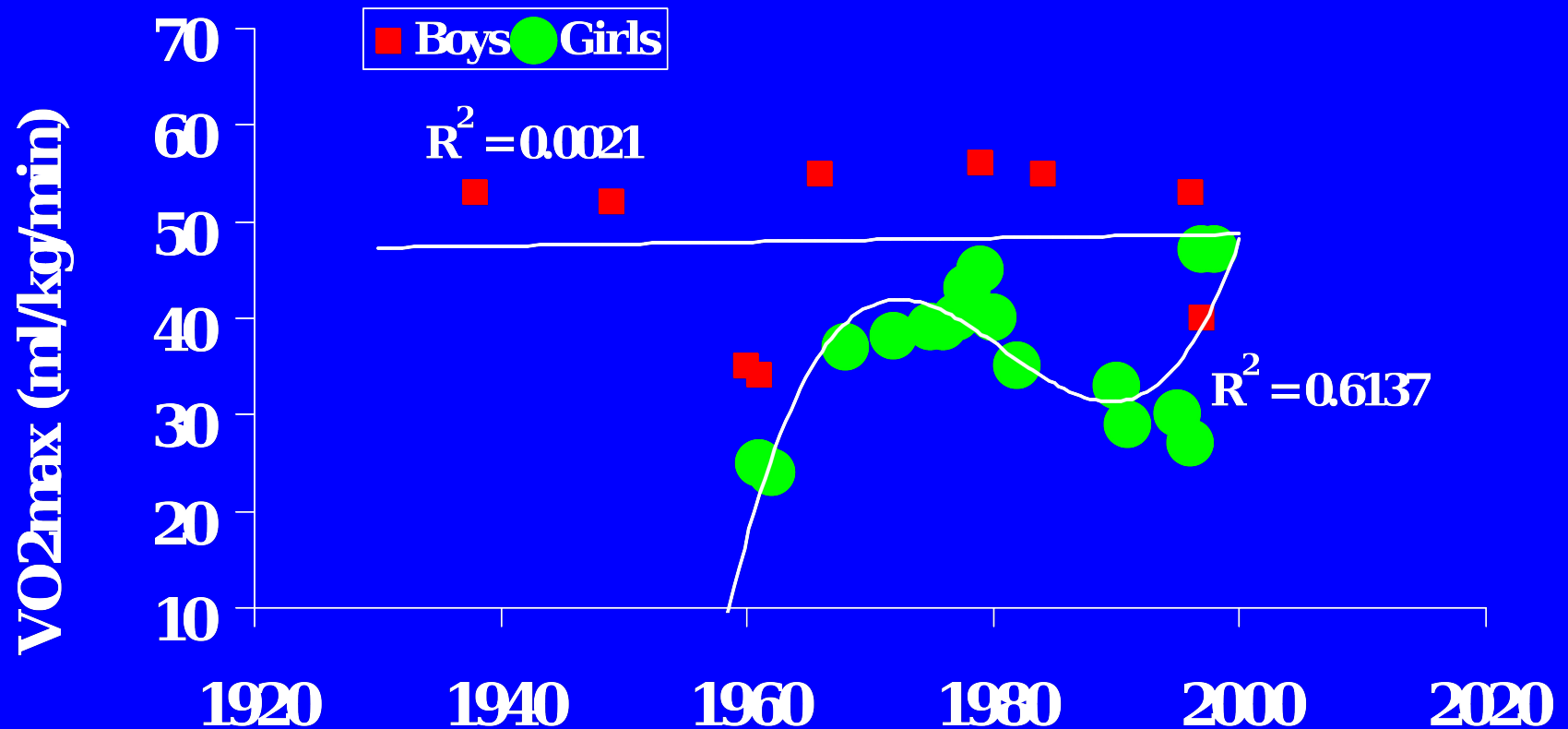
Attrition From the Military Services

- **Approach**
 - **Define how large is the problem**
 - **Determine risk factors for attrition**
 - **Identify interventions to reduce attrition**
- **Focus**
 - **Evidence based information**
 - **Health/fitness aspects of attrition**
- **Progress - First draft completed**

Current and Projected Youth Fitness and BCT Fitness Improvements

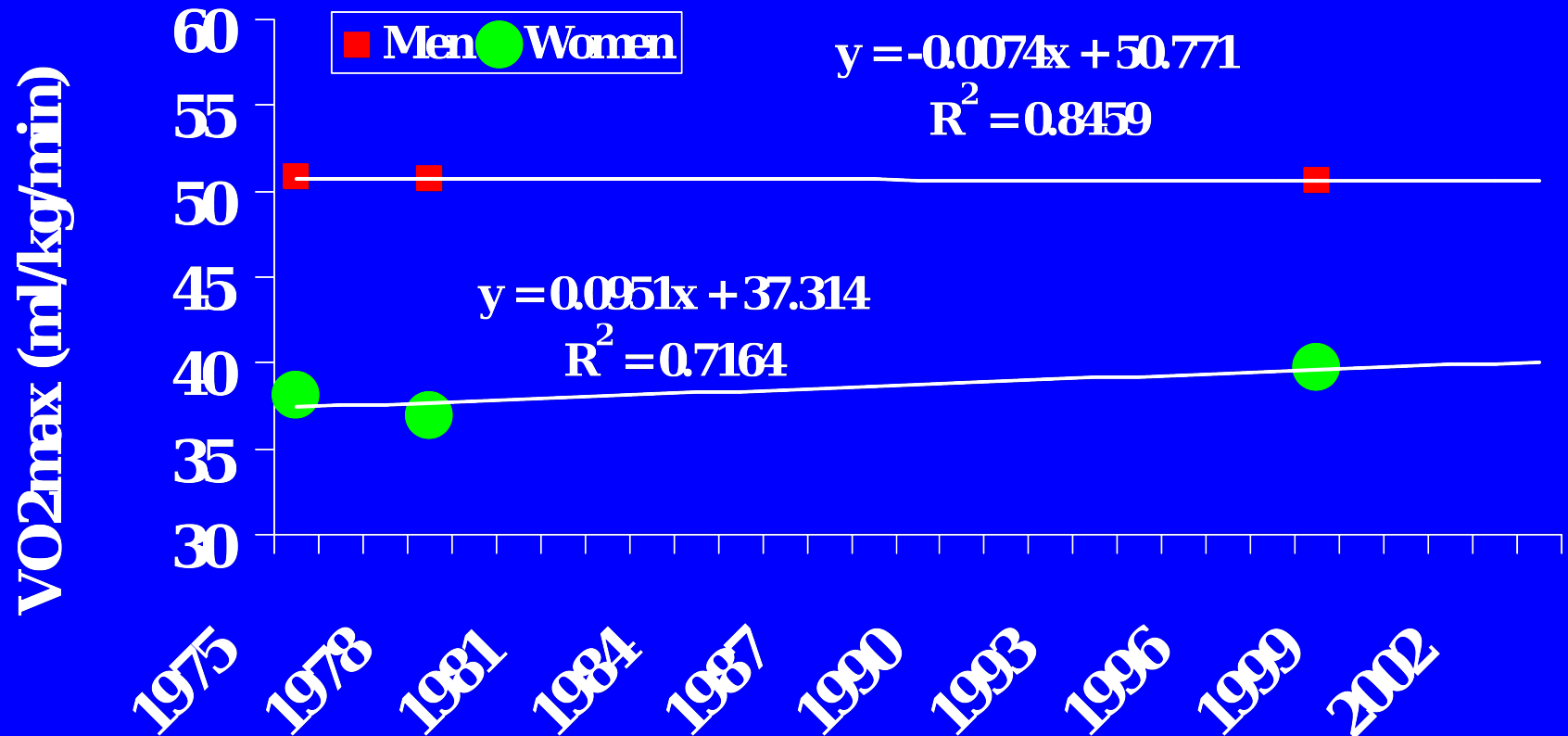
- Define fitness
- Civilian studies (very limited except for weight and BMI)
 - Peer-reviewed (aerobic fitness and muscular endurance)
 - Data from NHES and NHANES (weight and BMI)
 - Data from YRBS (physical activity of high-school aged youth 1991-2001)
 - Data from BRFSS (physical activity, weight, and BMI of 18-34 year olds)
- Military studies on recruits – Many aspects of fitness measured as far back as 1975
- Progress – Paper being organized

Secular Trends in VO_2max in 15-19 Year Olds



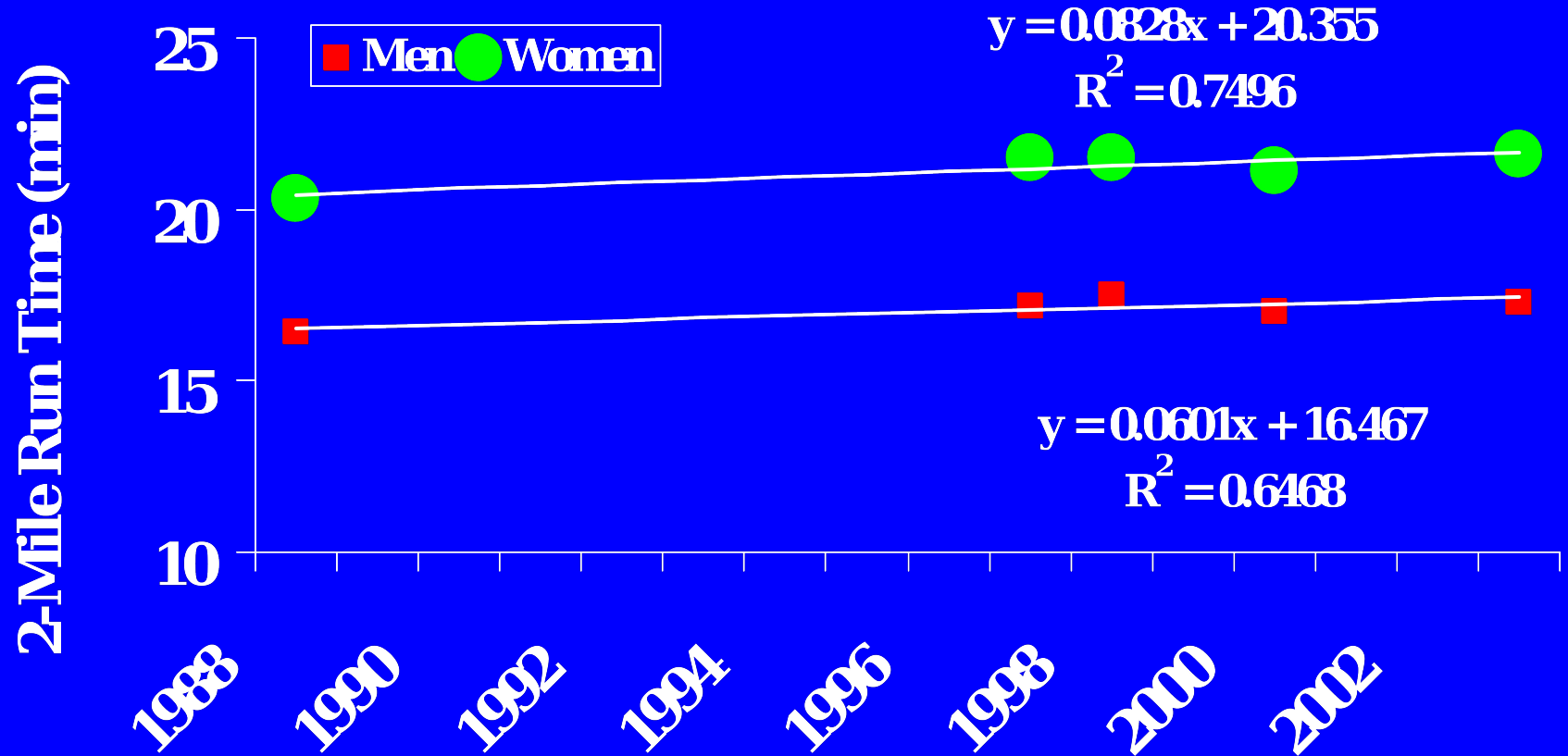
Eisenmann, Am J Human Biol 14:699, 2002

Secular Changes in VO_2max on Entry to BCT

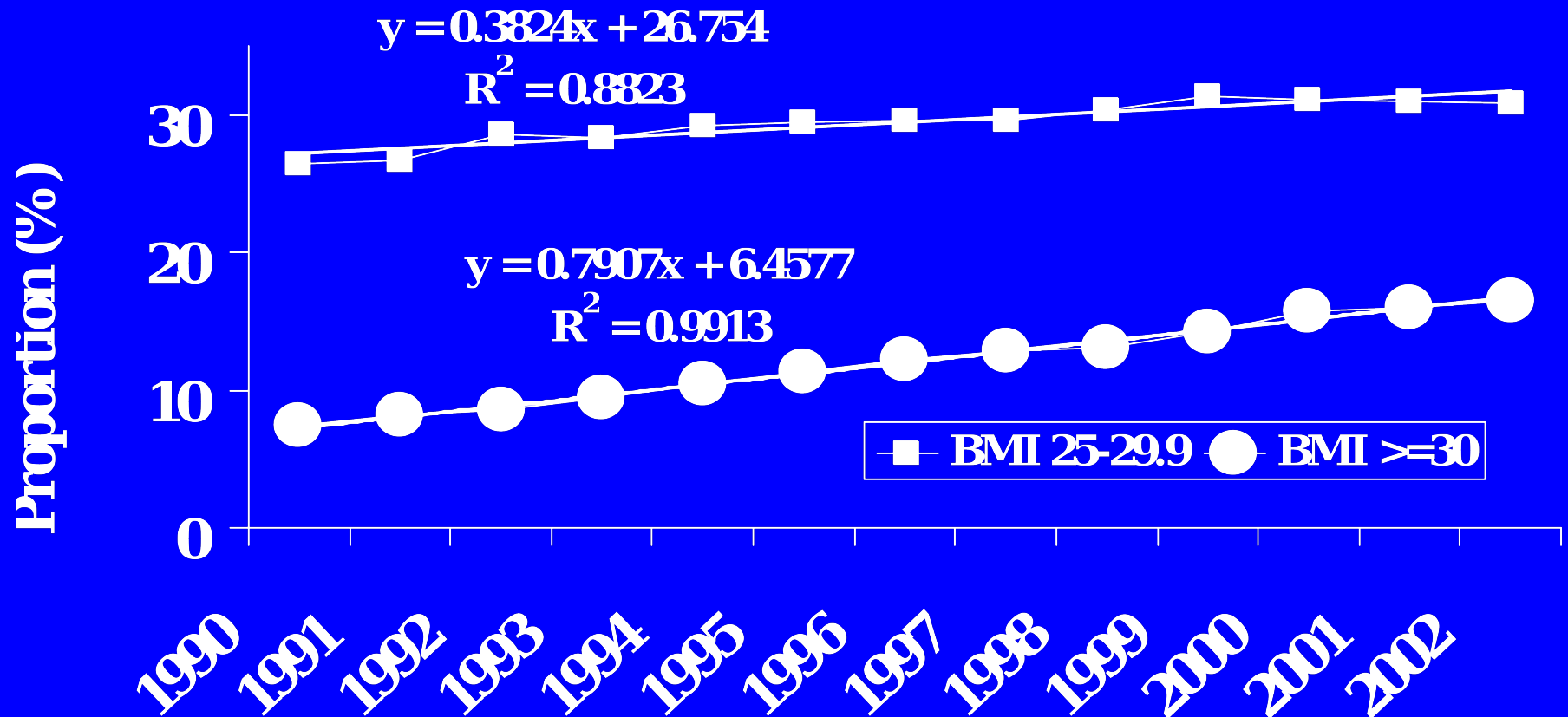


Vogel, Med Sci Sports Exerc 9:58, 1977; Patton Aviat Space
Environ Med 51:492, 1980; Sharp Med Sci Sports Exerc 34:356,
2002

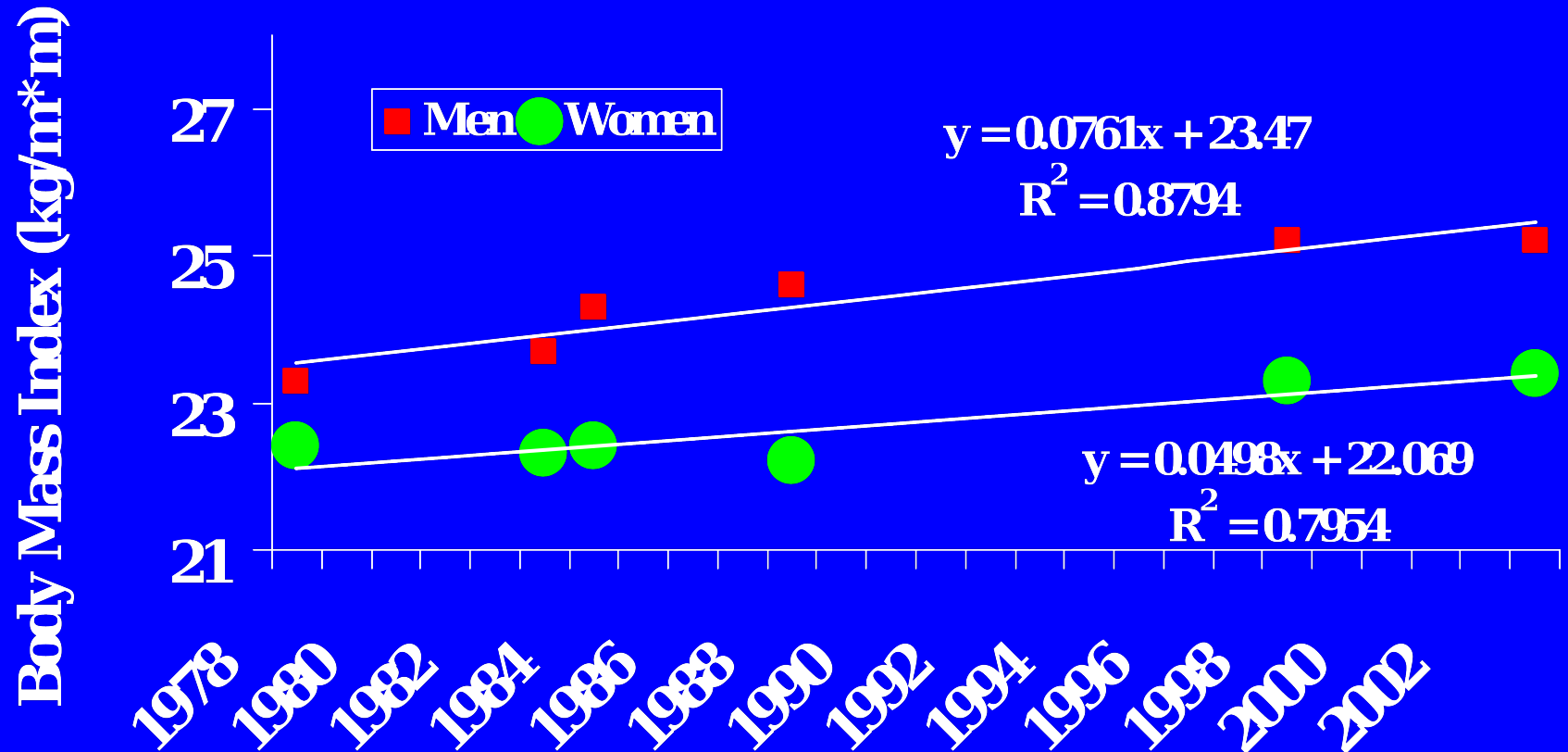
Secular Trends in Two-Mile Run Times on Entry to BCT



Secular Trends in BMI for 18-34 year Olds From the BRFSS



Secular Changes in BMI On Entry to BCT



Changes in Weight and Body Composition Among US Army Recruits 1978 and 1998

	Weight (kg)	Body Fat (kg)	Fat Free Mass (kg)
Men 1978	71	12	59
Men 1998	79	15	64
Women 1978	59	17	42
Women 1998	63	19	44

Sharp, Med Sci Sports Exerc 34:256, 2002

AIT Fate of Low Fit in BCT

- Analyze APFT databases to identify low fit trainees in BCT at Ft Jackson (150-160 points)
- Determine APFT scores and attrition of those who entered Ordnance School at APG (4 year database)

Pre-Assessment Physical Fitness Screening

- Literature review – US studies (MEPSCAT), Canadian studies, British studies, Dutch studies
- Determine 3 COAs for pre-accession fitness testing (valid, reliable measures)
 - PU, SU, Run
 - Others not determined yet

**HOW WOULD A PRE-
ACCESSION PHYSICAL
FITNESS SCREEN INFLUENCE
ATTRITION?**

BAD (Best Available Data) from FAP

Reception Station Fitness Test (Fitness Criteria to Enter BCT)

Year	Gender	PU (reps)	SU (reps)	1-Mile Run (min)
1998	Men	13	17	9.0
	Women	3	17	11.0
2003	Men	13	17	8.5
	Women	3	17	10.5

Proportion (%) of Men and Women Failing the Reception Station Fitness Test and Entering the FAP

	Men (%)	Women (%)
FY00	4.3	12.2
FY01	4.4	12.7
FY02	5.4	14.8
FY03	3.9	10.1

Data from S-1, 120th Reception Bn and CPT Bryant

Attrition With and Without Reception Station Fitness Screen

Group	Men (%)			Women (%)		
	Total Trainees (n)	Attrition BCT (%)	Attrition 1yr (%)	Total Trainees (n)	Attrition BCT (%)	Attrition 1yr (%)
Failed RS Screen -> BCT	32	24.0	27.0	73	29.4	33.5
Failed RS Screen, Train->BCT	64	10.6	12.5	94	25.1	29.6
Pass RS Screen	1078	7.8	8.0	731	15.4	16.0

(FY02\$) 1 Year: 129 X

\$47,216 = \$6,090,864 (FY02\$)

Estimates based on data from Chaquet, Milit Med 166: 820, 2001; Hauret, Milit Med, In Press; Knapik, Milit Med 168: 490, 2003; Knapik, USACHPPM Tech Report 12-HF-XXX-04, 2004

U.S. Army Center for Health Promotion & Preventive Medicine

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of the
National Military Strategy

